UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,472	04/06/2005	Fabrice TP Saffre	LSN-36-1891	5331

23117   7590   07/15/2009
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EXAMINER
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ART UNIT	PAPER NUMBER
2446	

MAIL DATE	DELIVERY MODE
07/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/530,472	SAFFRE, FABRICE TP	
	Examiner	Art Unit	
	SULAIMAN NOORISTANY	2446	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>5/6/2009</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,3-6,8-12,14-17,19-27 and 29-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,3-6,8-12,14-17,19-27 and 29-32</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>06 May 2009</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>7/8/2005</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____

Detailed Action

This Office Action is response to the application (10/530472) filed on 5/6/2009.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114. including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 7 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/18/08 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1, 3-6, 8-12, 14-17, 19-27, 29-32 are rejected under 112, second paragraph as being indefinite for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention

In claim 1, "*a parent node identifier arranged to identify a parent node at a lowest level in the network*" is indefinite and not clear what this is in reference to (e.g., is this means that a patent node will isolate a different parent node?). However, the claims will be given a broad reasonable interpretation for the purposes of examination as best understood.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-6, 8-12, 14-17, 19-27, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gregerson.** US Patent No. **US 5,699,351** further in view of in view of **O'Toole.** US Patent No. **US 7,117,273** further in view of **Ho** US Patent No. **US 5598570**.

Regarding claim 1, Gregerson teaches wherein a node for a network, the network comprising a hierarchical structure in which a node is considered to be at a higher level than a parent node to which it connects when joining the network, a node comprising:

     a parent node identifier arranged to identify a parent node at a lowest level in the network that is able to maintain secondary connections to other nodes in the network of the same lowest level **(Fig. 9 -- is a diagram showing the roll call communication between different nodes in accordance with the present invention – col. 3, lines 51-53; FIG. 14 is a diagram showing the election communication between different nodes in accordance with the present invention – col. 2, lines 65-67);**

     a connection initiator and maintaining a specified number k-1 of further secondary connections between the node and other nodes in the network having the same level in the hierarchy as the node **(A kernel at level n is termed to be a child of**

**its parent kernel at level n+1 provided that two kernels have the same name
above level n – Col. 7, lines 41-44);**

if the node is a peripheral node the node has at least the same number of
connections as more central nodes in the network **(Fig. 14, unit 73-74)**.

However, Gregerson is silent in terms of "*terminated and reallocated of the
nodes" and "spare connection*".

O'Toole teaches that is well known to utilize by requesting one of the secondary
connections of the parent node to other nodes in the network of the same level to be
terminated and reallocated to the node if the identified parent node has no free links to
become a primary connection between the identified parent node and the node at a
lower level in the network hierarchy **(Each child node periodically checks in with its
parent nodes, and the parent nodes can thus determine when a child node has
terminated a relationship with the parent or created "here is same as re-
allocated" a new relationship with a new parent -- Abstract) and**

the node advertise a spare connection to maintaining k connections to each node
**(broadcasting and the Alt-route –FIG. 2 illustrates an example of relationships
among nodes in a network, including a creation signal and a termination signal
generated by nodes configured to operate in accordance with embodiments of
the invention – col. 6, lines 30-33).**

It would have been obvious to one of ordinary skill in the art at the time the
invention was made to modify Gregerson's invention by using the system of a network
in which nodes such as a host, a hub, rooter, etc. are interconnected, each node is

indicated by an icon, and the connection between the nodes is indicated by a line. A node to be regarded is positioned in the center of the map as a root, and a node directly connected to the root is arranged as a node at the second hierarchical level on the circumference of the circle with the root centered. Similarly, the network configuration is assumed to be a hierarchical structure with the root centered, where the root can receive change information, because each child node in the node tree periodically checks in with its parent and reports its status to the parent, as well as information on the status of descendants of the child in the network. For example, a new parent of a child reports a creation signal (e.g., creation of a relationship between the node and a child) when a child node connects to a new parent node. A parent node can also generate a termination relationship signal (e.g., termination of a relationship between the node and a child) when one of its child nodes ends the relationship with the parent node (e.g. stops checking in). At a higher level in the tree, if an intermediate node (e.g., parent node intermediate between lower level parents and the root) receives several creation and termination signals for a lower level node (e.g., a child node that has moved several times), it can report only the most recent creation and termination signals to higher level nodes in the network. Thus, the root only receives the creation and termination signals that are most recent for a given node (e.g., child node). In addition, the node that received the change relationship signal locates an entry in the map corresponding to the parent node, and updates the entry for the parent node to indicate that the child node is no longer a child of that parent node, where this indicates that there was spare or free link created and would be available to accept the new child

node which were from depended on different parent nodes or failed their connectivity

with their parent node, <u>as taught by O'Toole</u>.

However, Ho further teaches wherein the node is constrained by the same

connection rules as other nodes in the network to have a maximum number of k

connections, and if the node is a peripheral node the node has at least the same

number of connections as more central nodes in the network **(Fig. 7A -- is another**

schematic illustration of a supergraph multiprocessor computer system) in order

to make the system more efficient for data allocation management in multiprocessor

computer system.

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Gregerson's invention by using a plurality of processors

configured in an architecture having at least two subgraphs wherein at least a first

subgraph and a second subgraph having the same topology and corresponding

processors being stepwise complimentary for a data redistribution operation. In addition,

this invention relates generally to the data allocation and transmission management for

a computer system. More particularly this invention provides specific types of computer

systems comprising a resource management system, as taught by Ho.

Regarding claim 3, Gregerson, O'Toole and Ho together taught the method of a node

as in claim 1 above. Gregerson further teaches wherein to attempt to maintain the

specified number of k-1 further connections between the node and other nodes in the

network by periodically carrying out:

for each unallocated one of the k-1 connections, selecting a node from one or more candidate nodes, and forming a connection with the selected node **(A kernel enters the network by running the Login process to locate its parent kernel, Col. 7, Lines 56-67)**,

O'Toole further teaches wherein until either the k-1 further connections have been successfully completed or there are no more candidate nodes **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Regarding claim 4 Gregerson, O'Toole and Ho together taught the method of a node as in claim 1 above. Gregerson further teaches wherein the step of selecting the peer node comprises selecting the peer node at random from the one or more candidate nodes **(The present invention is a dynamic, Symmetrical, distributed, real-time, peer-to-peer system comprised of an arbitrary "here is same as random" number of identical, Col. 2, Lines 46-53).**

O'Toole further teaches **(nodes are chosen at random – Col. 31, lines 26-27).**

Regarding claim 5, Gregerson, O'Toole and Ho together taught the method of a node as in claim 1 above. Gregerson further teaches wherein the step of selecting the node comprises selecting the node on the basis of the range of the candidate nodes to the node **(The configuration parameter MaxStatus imposes a ceiling on the highest**

level of which the kernel can be a manager. A kernel at level n is termed to be a
child of its parent kernel at level n+l -- Col. 7, Lines 39-44).

Regarding claim 6, Gregerson, O'Toole and Ho together taught the method of a node
as in claim 1 above. Gregerson further teaches wherein the network comprises an
overlay network formed over an underlying network of nodes **(Fig. 14, underlying mix
of physical topologies -- Col. 2, Lines 59-60)**, and wherein the range between a
candidate node and the node comprises the number of links between them in the
underlying network **(A kernel at level n is termed to be a child of its parent kernel at
level n+l provided that the two kernels have the same name above level n -- Col. 7,
Lines 39-44)**.

Regarding claim 8, Gregerson, O'Toole and Ho together taught the method of a node
as in claim 1 above. O'Toole further teaches wherein to identify another node as a
prospective parent node on the basis of the range of the other node to the node **(Fig. 1,
unit 33 – sample map – col. 8, lines 26-27)**.

Regarding claim 9, Gregerson, O'Toole and Ho together taught the method of a node
as in claim 1 above. O'Toole further teaches wherein to identify another node as a
prospective parent node if it is within a specified range of the node **(Fig. 1, unit 33 –
sample map – col. 8, lines 26-27)**.

Regarding claim 10, Gregerson, O'Toole and Ho together taught the method of a node

as in claim 1 above. Gregerson further teaches wherein in the event that the primary

connection fails **(PLN employs a system of "heartbeat" messages, which is used to**

monitor the status of nodes within the network and identify network failures, Col.

6, Lines 22-24).

       O'Toole further teaches wherein in the event that the primary connection fails to

re-establish a primary connection with another node which is at a lower level in the

network hierarchy than the node **(FIG. 2 illustrates an example of relationships**

among nodes in a network, including a creation signal and a termination signal

generated by nodes configured to operate in accordance with embodiments of

the invention – col. 6, lines 30-33).

Regarding claim 11, Gregerson, O'Toole and Ho together taught the method of a node

as in claim 1 above. Gregerson further teaches wherein in which the specified number k

of connections is substantially the same for every node **(A kernel at level n is termed**

to be a child of its parent kernel at level n+l provided that the two kernels have the

same name above level n, Col. 7, Lines 39-44; The present invention is a dynamic,

Symmetrical, distributed, real-time, peer-to-peer system Col. 2, Lines 46-53)).

Claim 12 list all the same elements of **claim 1**, but in storage system rather than

method form. Therefore, the supporting rationale of the rejection to **claim 1** applies

equally as well to **claim 12**.

 Regarding claim 14, Gregerson, O'Toole and Ho together taught the method of a

node as in claim 12 above. Gregerson further teaches wherein to attempt to maintain

the specified number of k-1 further connections between the node and other nodes in

the network by periodically carrying out:

      for each unallocated one of the k-1 connections, selecting a node from one or

more candidate nodes, and forming a connection with the selected node **(A kernel**

enters the network by running the Login process to locate its parent kernel, Col.

7, Lines 56-67),

      <u>O'Toole</u> further teaches wherein until either the k-1 further connections have

been successfully completed or there are no more candidate nodes **(FIG. 2 illustrates**

an example of relationships among nodes in a network, including a creation

signal and a termination signal generated by nodes configured to operate in

accordance with embodiments of the invention – col. 6, lines 30-33).

Regarding claim 15, Gregerson, O'Toole and Ho together taught the method of a node

as in claim 12 above. Gregerson further teaches wherein the step of selecting the peer

node comprises selecting the peer node at random from the one or more candidate

nodes **(The present invention is a dynamic, Symmetrical, distributed, real-time,**

peer-to-peer system comprised of an arbitrary "here is same as random" number

of identical, Col. 2, Lines 46-53).

O'Toole further teaches **(nodes are chosen at random – Col. 31, lines 26-27).**

Regarding claim16, Gregerson, O'Toole and Ho together taught the method of a node as in claim 12 above. Gregerson further teaches wherein the step of selecting the node comprises selecting the node on the basis of the range of the candidate nodes to the node **(The configuration parameter MaxStatus imposes a ceiling on the highest level of which the kernel can be a manager. A kernel at level n is termed to be a child of its parent kernel at level n+l -- Col. 7, Lines 39-44).**

Regarding claim17, Gregerson, O'Toole and Ho together taught the method of a node as in claims 12 above. Gregerson further teaches wherein the network comprises an overlay network formed over an underlying network of nodes **(Fig. 14, underlying mix of physical topologies -- Col. 2, Lines 59-60)**, and wherein the range between a candidate node and the node comprises the number of links between them in the underlying network **(A kernel at level n is termed to be a child of its parent kernel at level n+l provided that the two kernels have the same name above level n -- Col. 7, Lines 39-44).**

Regarding claim 19, Gregerson, O'Toole and Ho together taught the method of a node as in claims 12, above. O'Toole further teaches wherein to identify another node as a prospective parent node on the basis of the range of the other node to the node **(Fig. 1,**

unit 33 – sample map – col. 8, lines 26-27).

Regarding claim 20, Gregerson, O'Toole and Ho together taught the method of a node as in claim 12 above. O'Toole further teaches wherein to identify another node as a prospective parent node if it is within a specified range of the node **(Fig. 1, unit 33 – sample map – col. 8, lines 26-27).**

Regarding claim 21, Gregerson, O'Toole and Ho together taught the method of a node as in claim 12 above. Gregerson further teaches wherein in the event that the primary connection fails **(PLN employs a system of "heartbeat" messages, which is used to monitor the status of nodes within the network and identify network failures, Col. 6, Lines 22-24).**

O'Toole further teaches wherein in the event that the primary connection fails to re-establish a primary connection with another node which is at a lower level in the network hierarchy than the node **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Regarding claim 22, Gregerson, O'Toole and Ho together taught the method of a node as in claim 12 above. Gregerson further teaches wherein in which the specified number k of connections is substantially the same for every node **(A kernel at level n is termed**

to be a child of its parent kernel at level n+l provided that the two kernels have the
same name above level n, Col. 7, Lines 39-44; The present invention is a dynamic,
<u>Symmetrical</u>, distributed, real-time, peer-to-peer system Col. 2, Lines 46-53)).

Regarding claim 23, Gregerson, O'Toole and Ho together taught the method of a node
as in claim 12 above. O'Toole further teaches wherein a tangible data store containing a
computer program comprising instructions for causing one or more processors to
operate as the node when the instructions are executed by the processor or processors
(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).

Regarding claim 24, Gregerson, O'Toole and Ho together taught the method of a node
as in claim 12 above. O'Toole further teaches wherein a storage medium carrying
computer readable code representing instructions for causing one or more processors
to operate as the node when the instructions are executed by the processor or
processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claim 26, Gregerson, O'Toole and Ho together taught the method of a node
as in claim12 above. O'Toole further teaches wherein a tangible data store containing a
computer program comprising instructions for causing one or more processors to
operate as the node when the instructions are executed by the processor or processors
(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).

Regarding claim 27, Gregerson, O'Toole and Ho together taught the method of a node

as in claim 12 above. O'Toole further teaches wherein a storage medium carrying

computer readable code representing instructions for causing one or more processors

to operate as the node when the instructions are executed by the processor or

processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claims 29 Gregerson, O'Toole and Ho together taught the method of a

node as in claim 12 above. O'Toole further teaches wherein the node is adapted to:

upon receipt of a request from a further node desiring to form its primary

connection with the node and in the event that none of the k- 1 of further connections of

the node is unallocated, then to: select one of the further k-1 connections which is not a

primary connection for one of the other nodes; and to re-allocate that selected further

connection to the further node so as to form the primary connection for the further node

(The technique includes identifying resources that join the network by switching

from an inactive to an active state; and informing the requester the availability of

the requested resource, Abstract, Lines 8-11).

Regarding claim 30 Gregerson, O'Toole and Ho together taught the method of a node

as in claim 12 above. O'Toole further teaches wherein the node is adapted to:

upon receipt of a request from a further node desiring to form its primary

connection with the node and in the event that none of the k- 1 of further connections of

the node is unallocated, then to: select one of the further k-1 connections which is not a

primary connection for one of the other nodes; and to re-allocate that selected further

connection to the further node so as to form the primary connection for the further node

(The technique includes identifying resources that join the network by switching

from an inactive to an active state; and informing the requester the availability of

the requested resource, Abstract, Lines 8-11).

Claim 31 list all the same elements of **claim 1**, but in method rather than network node

form. Therefore, the supporting rationale of the rejection to **claim 1** applies equally as

well to **claim 31**.

Claim 32 list all the same elements of **claim 1**, but in storage system rather than

network node form. Therefore, the supporting rationale of the rejection to **claim 1**

applies equally as well to **claim 32**.

Response to Arguments

Applicant's arguments with respect to claim(s) 1, 3-6, 8-12, 14-17, 19-27, 29-32

have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sulaiman Nooristany whose telephone number is (571)

270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to

reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu,

can be reached on (571) 272-6798. The fax phone number for the organization where

this application or proceeding is assigned is 571-273-8300. Information regarding the

status of an application may be obtained from the Patent Application Information

Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the

PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to

the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

Sulaiman Nooristany 07/08/2009

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446